

REMARKS

The Office Action mailed September 21, 2010 has been reviewed and carefully considered. No new matter has been added.

Claims 14-15 have been amended. Claims 1-15 are pending.

Initially, for purposes of coordination of examination, Applicants wish to bring to the Examiner's attention the fact that applications are currently undergoing examination that have related subject matter. One application is U.S. Application No. 10/560,477 entitled "Encoding Method and Apparatus Enabling Fast Channel Change of Compressed Video", which has claims generally directed to the encoding method and apparatus. Another application is U.S. Application No. 10/559,643 entitled "Decoding Method and Apparatus Enabling Fast Channel Change of Compressed Video", which has claims generally directed to the encoding method and apparatus. Both are assigned to Examiner James A. Thompson in Art Unit 2625, and both currently have an office action outstanding. U.S. Application No. 10/559,643 is somewhat further along in the prosecution process, and therefore understandably, some of the same issues present in the instant application were already dealt with and are no longer issues in U.S. Application No. 10/559,643.

The Applicants gratefully acknowledge the Examiner's withdrawal of the previous restriction requirement. Accordingly, previously withdrawn claims 14 and 15 are now again pending in the instant application.

Moreover, the Applicants gratefully acknowledge the Examiner's acknowledgement of the receipt of papers under 35 U.S.C. 119(a)-(d) regarding priority.

Claims 14 and 15 stand rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. Accordingly, Claim 14 has been amended to now recite "A non-transitory digital videodisc encoded with signal data comprising a plurality of block transform coefficients for each of normal stream and channel change stream data" (emphasis added). Similarly, Claim 15 has been amended to now recite "A non-transitory digital videodisc as defined in Claim 14" (emphasis added). As noted in a memo (hereinafter also referred to as the "Kappos' memo", a copy of which is enclosed herewith for the Examiner's convenience) dated January 26, 2010 from David J. Kappos, Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office, "[a] claim drawn to such a computer readable medium that covers both transitory and non-transitory embodiments may be amended to narrow the claim to cover only

statutory embodiments to avoid a rejection under 35 U.S.C. 101 by adding the limitation ‘non-transitory’ to the claim.” The memo further statutes that “[s]uch an amendment would typically not raise the issue of new matter, even the specification is silent because the broadest reasonable interpretation relies on the ordinary and customary meaning that includes signals per se.”

Accordingly, Claims 14 and 28 are believed to satisfy the requirements of 35 U.S.C. 101 for at least the preceding reasons. Thus, reconsideration of the rejection is respectfully requested.

Claims 1, 3-5, and 7-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application No. EP 0 883 299 A2 to Nakagawa (hereinafter “Nakagawa”) in view of U.S. Patent Application No. 2004/0034864 to Barrett (hereinafter “Barrett”). Claim 2 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa in view of Barrett and U.S. Patent No. 6,587,505 to Nozawa (hereinafter “Nozawa”). Claims 6, 14, and 15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa in view of Barrett and well-known prior art. The rejections are respectfully traversed.

The independent claims currently pending are Claims 1, 10, 13 and 14. As noted above, Claim 14 has been amended. In particular, Claim 14 has been amended to now include the multiplexing/combining feature of Claims 1, 10 and 13.

It is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations recited in Claim 1:

1. A video encoder for receiving input pictures and providing compressed stream data, the encoder comprising:
 - a normal encoding portion for receiving input pictures and providing normal stream data;
 - a lower-quality encoding portion for receiving input pictures and providing channel change stream data; and
 - a multiplexor in signal communication with each of the normal and lower-quality portions for receiving and combining the normal and channel change data streams.

Moreover, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations recited in Claim 10:

10. A video encoding method for receiving input pictures and providing compressed stream data, the method comprising:
receiving input pictures;
encoding normal stream data from the received input pictures;
encoding channel change stream data from the received input pictures
wherein the channel change stream data comprises lower-quality encoded data than the normal stream data; and
multiplexing the normal and channel change data streams into a combined output stream.

Also, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations recited in Claim 13:

13. A video encoding apparatus for receiving input pictures and providing compressed stream data, the apparatus comprising:
means for receiving input pictures;
means for encoding normal stream data from the received input pictures;
means for encoding channel change stream data from the received input pictures, wherein the channel change stream data comprises lower-quality encoded data than the normal stream data; and
means for combining the normal and channel change data streams into a combined output stream.

Additionally, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations recited in Claim 14:

14. A non-transitory digital videodisc encoded with signal data comprising a plurality of block transform coefficients for a combined stream formed from each of normal stream and channel change stream data, the coefficients indicative of an original signal data sequence, the normal stream data of the digital videodisc having coefficients embodying a normal quality data sequence, and the channel change stream of the digital videodisc having coefficients embodying a reduced-quality data sequence, the reduced-quality data sequence comprising at least one additional intra-coded picture.

Against the preceding reproduced limitations of Claims 1, 10, and 13 relating to a multiplexer (Claim 1) or multiplexing (Claim 10) or means for combining (Claim 13) with respect to the normal stream and the channel change stream, the Examiner has cited the following portions of Nakagawa with the following reasoning: “column 8, lines 3-11 of Nakagawa – normal and lower-quality data streams combined according to resolution selection controller, and stored frames are converted accordingly.”

However, the Examiner then admits that “Nakagawa does not disclose expressly that the lower-quality encoding portion provides channel change stream data; and that the multiplexer combines the normal and channel change data streams”.

Referring back to column 8, lines 3-11 of Nakagawa, the same discloses the following in its entirety:

Next, suppose that the resolution selection controller 1 has changed the picture resolution mode to the low resolution mode to encode the next frame. Upon transition in the picture resolution from high to low, the low resolution picture updating unit 14 entirely converts the picture stored in the high-resolution picture storage unit 3 to the low resolution, and feeds the resultant low-resolution picture to the low-resolution picture storage unit 4.

Initially, we note that we respectfully disagree with the Examiner’s reading of Nakagawa. For example, Nakagawa does not combine a high resolution stream and a low resolution stream, let

alone combining a normal stream and a channel change stream as essentially recited in each of Claims 1, 10, 13, and 14, let alone doing the same using a multiplexer or multiplexing as recited in Claims 1 and 10, respectively. For example, the entire disclosure of Nakagawa does not even disclose a “multiplexer” or “multiplexing” as recited in Claims 1 and 10, respectively. Moreover, we note per at least the preambles of each of Claims 1, 10, 13, and 14, the resultant combined data stream is provided (output) from the corresponding video encoder of Claim 1, the video encoding method of Claim 10, the video encoding apparatus of Claim 13, and the digital videodisc of Claim 14.

Moreover, we note that the channel change stream data comprises lower-quality encoded data than the normal stream data, as essentially recited in each of Claims 1, 10, 13, and 14. Thus, while a combination stream is essentially formed in each of Claims 1, 10, 13, and 14 by virtue of the combining/multiplexing of the normal stream and the channel change stream, Nakagawa is solely concerned with outputting ONLY ONE OF a high resolution picture OR a low resolution picture, and hence never forms a combination stream in contrast to the multiplexer/means for combining or multiplexing/combining essentially recited in Claims 1, 10, 13, and 14.

For example, col. 2, line 35 to col. 3, line 1 of Nakagawa disclose the following:

a video coding apparatus for *performing* a predictive *coding of digital video input signals* in conjunction with an internal picture format conversion *according to a picture resolution mode that is determined by a resolution selection controller*.... Here, the picture resolution mode can be *EITHER a high resolution mode OR a low resolution mode*. This proposed video coding apparatus comprises ... a selective reading-out unit to selectively read out the high-resolution picture *from* the high-resolution picture storage unit *when* the high resolution mode has been selected by the resolution selection controller, *OR* the low-resolution picture *from* the low-resolution picture storage unit *when* the low resolution mode has been selected by the resolution selection controller.

Regarding the preceding reproduced portion of Nakagawa, we note the selective reading-out unit that selectively reads out from ONE of the high-resolution picture

storage unit OR the low-resolution picture storage unit. We note that the selective reading-out unit shown in FIG. 1 of Nakagawa involves a switch having two inputs and one output, where only one of the inputs can be selected at any given time. We note that one input is connected to the high-resolution picture storage unit, and the other input is connected to the low-resolution picture storage unit. Given such a structure of the selective reading-out unit 14, Nakagawa cannot output both a high-resolution picture and a low-resolution picture at the same time, let alone combine the same for providing a combined output as essentially recited in each of Claims 1, 10, 13, and 14.

Moreover, column 4, lines 43-45 of Nakagawa disclose that “the picture resolution mode can be ***EITHER*** a high resolution mode ***OR*** a low resolution mode” (emphasis added).

Thus, the cited portion of Nakagawa does not teach or suggest combining two streams, but rather converting a picture stored in a high-resolution picture store to a low resolution and providing that low-resolution picture to a low-resolution picture store. Moreover, even if assuming arguendo that any combining where in fact disclosed in Nakagawa, such combining clearly is not performed to provide (output) a combined stream as the apparatus and method of Nakagawa only outputs either a high-resolution picture or a low-resolution picture.

Thus, by limiting its output to either a high-resolution picture or a low-resolution picture, while each of Claims 1, 10, 13, and 14 involves multiplexing or otherwise combining the normal stream and the channel change stream, the invention of Nakagawa can be considered to actually teach away from the explicit limitations recited in Claims 1, 10, 13, and 14. However, as set forth in MPEP 2145.X.D.1, “It is improper to combine references where the references teach away from their combination.” *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983) (The claimed catalyst which contained both iron and an alkali metal was not suggested by the combination of a reference which taught the interchangeability of antimony and alkali metal with the same beneficial result, combined with a reference expressly excluding antimony from, and adding iron to, a catalyst.).

Hence, Nakagawa does not teach or suggest all the above reproduced limitations of Claims 1, 10, 13, and 14.

We note that Barrett does not cure the deficiencies of Nakagawa and, similar to Nakagawa actually teaches away from the explicit limitations recited in Claims 1, 10, 13, and 14. For example, the **Examiner has even admitted** at the onset that “Barrett discloses **encoding** normal stream data and **separately encoding** channel change stream data (fig. 5 and para. 6 of Barrett)”. Thus, similar to Nakagawa, Barrett does not disclose multiplexing and/or otherwise combining a normal stream with a channel change stream as recited in Claims 1, 10, 13, and 14.

Thus, none of the cited references, either taken singly or in any combination, teach or suggest all of the above reproduced limitations of Claims 1, 10, 13, and 14.

The failure of an asserted combination to teach or suggest each and every feature of a claim remains fatal to an obviousness rejection under 35 U.S.C. § 103. Section 2143.03 of the MPEP requires the "consideration" of every claim feature in an obviousness determination. To render a claim unpatentable, however, the Office must do more than merely "consider" each and every feature for this claim. Instead, the asserted combination of the patents must also teach or suggest *each and every claim feature*. See *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) (emphasis added) (to establish *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art). Indeed, as the Board of Patent Appeal and Interferences has recently confirmed, a proper obviousness determination requires that an Examiner make "a searching comparison of the claimed invention - *including all its limitations* - with the teaching of the prior art." See *In re Wada and Murphy*, Appeal 2007-3733, citing *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis in original). “If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious” (MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

Hence, Claims 1, 10, 13, and 14 are patentably distinct and non-obvious over the cited references for at least the reasons set forth above.

Claims 2-9, 11-12, and 15 directly or indirectly depend from Claims 1, 10, and 14, respectively, and thus include all the limitations of Claims 1, 10, and 14, respectively. Accordingly, Claims 2-9, 11-12, and 15 are patentably distinct and non-obvious over the cited references for at least the reasons set forth above with respect to Claims 1, 10, and 14, respectively.

Reconsideration of the rejections is respectfully requested.

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In view of the foregoing, Applicants respectfully request that the rejections of the claims set forth in the Office Action of September 21, 2010 be withdrawn, that the pending claims be allowed, and that the case proceed to early issuance of Letters Patent in due course.

It is believed that no further additional fees or charges are currently due. However, in the event that any additional fees or charges are required at this time in connection with the application, they may be charged to applicants' Deposit Account No. 07-0832.

Respectfully submitted,

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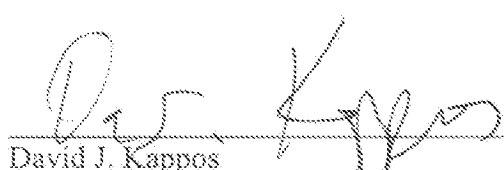
Date: November 2, 2010

Subject Matter Eligibility of Computer Readable Media

The United States Patent and Trademark Office (USPTO) is obliged to give claims their broadest reasonable interpretation consistent with the specification during proceedings before the USPTO. See *In re Zletz*, 893 F.2d 319 (Fed. Cir. 1989) (during patent examination the pending claims must be interpreted as broadly as their terms reasonably allow). The broadest reasonable interpretation of a claim drawn to a computer readable medium (also called machine readable medium and other such variations) typically covers forms of non-transitory tangible media and transitory propagating signals *per se* in view of the ordinary and customary meaning of computer readable media, particularly when the specification is silent. See MPEP 2111.01. When the broadest reasonable interpretation of a claim covers a signal *per se*, the claim must be rejected under 35 U.S.C. § 101 as covering non-statutory subject matter. See *In re Nuijten*, 500 F.3d 1346, 1356-57 (Fed. Cir. 2007) (transitory embodiments are not directed to statutory subject matter) and *Interim Examination Instructions for Evaluating Subject Matter Eligibility Under 35 U.S.C. § 101*, Aug. 24, 2009; p. 2.

The USPTO recognizes that applicants may have claims directed to computer readable media that cover signals *per se*, which the USPTO must reject under 35 U.S.C. § 101 as covering both non-statutory subject matter and statutory subject matter. In an effort to assist the patent community in overcoming a rejection or potential rejection under 35 U.S.C. § 101 in this situation, the USPTO suggests the following approach. A claim drawn to such a computer readable medium that covers both transitory and non-transitory embodiments may be amended to narrow the claim to cover only statutory embodiments to avoid a rejection under 35 U.S.C. § 101 by adding the limitation "non-transitory" to the claim. Cf. *Animals – Patentability*, 1077 Off. Gaz. Pat. Office 24 (April 21, 1987) (suggesting that applicants add the limitation "non-human" to a claim covering a multi-cellular organism to avoid a rejection under 35 U.S.C. § 101). Such an amendment would typically not raise the issue of new matter, even when the specification is silent because the broadest reasonable interpretation relies on the ordinary and customary meaning that includes signals *per se*. The limited situations in which such an amendment could raise issues of new matter occur, for example, when the specification does not support a non-transitory embodiment because a signal *per se* is the only viable embodiment such that the amended claim is impermissibly broadened beyond the supporting disclosure. See, e.g., *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473 (Fed. Cir. 1998).

Date: 1/24/10


David J. Kappos

Under Secretary of Commerce for Intellectual Property and
Director of the United States Patent and Trademark Office